

H 05756 PCT

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What is claimed is:

1. A process for bonding a first substrate surface to a second substrate surface wherein an adhesive is used to bond said first substrate surface and said second substrate surface and wherein at least one adhesion-reducing contaminate is present on at least one of said first substrate surface and said second substrate surface prior to bonding, said process comprising introducing vibration energy into the adhesive to remove at least a portion of said adhesion-reducing contaminate from at least one of said first substrate surface and said second substrate surface by dissolving or dispersing or both dissolving and dispersing said portion of said adhesion-reducing contaminate in said adhesive.
2. A process as claimed in claim 1, comprising the steps:
  - a) applying said adhesive to said first substrate surface, wherein said at least one adhesion-reducing contaminate is present on said first substrate surface to form an adhesive-coated first substrate surface;
  - b) applying said second substrate surface to the adhesive-coated first substrate surface;
  - c) introducing vibration energy into the adhesive; and
  - d) curing the adhesive.
3. A process as claimed in claim 1, wherein the adhesive is applied to one of said first substrate surface or second substrate surface while vibration energy is introduced.
4. A process as claimed in claim 1, wherein the vibration energy is ultrasound energy.
5. A process as claimed in claim 1, wherein the vibration energy is

introduced by fitting a sound head (sonotrode) to at least one of said first substrate surface or said second substrate surface.

6. A process as claimed in claim 5, wherein the sound head is directly  
5 coupled with an adhesive applicator.

7. A process as claimed in claim 5, wherein the adhesive, first  
substrate surface and second substrate surface form a bonded joint and  
the sound head or a combination of said sound head and an adhesive  
10 applicator is guided by a machine along the bonded joint.

8. A process as claimed in claim 7, wherein said machine is a program-  
controlled robot.

15 9. A process as claimed in claim 1, wherein during the introduction of  
the vibration energy, the adhesive has a temperature above ambient  
temperature.

10 10. A process as claimed in claim 1, wherein during the introduction of  
the vibration energy, the adhesive has a temperature in the range from  
25°C to 90°C.

11. A process as claimed in claim 1, wherein during the introduction of  
the vibration energy, the adhesive has a temperature in the range from  
25 35°C to 70°C.

12. A process as claimed in claim 2, wherein during the application of  
the adhesive, the adhesive has a temperature above ambient temperature.

30 13. A process as claimed in claim 2, wherein during the application of

the adhesive, the adhesive has a temperature in the range from 25°C to 90°C.

14. A process as claimed in claim 2, wherein during the application of  
5 the adhesive, the adhesive has a temperature in the range from 35°C to 70°C.

15. A process as claimed in claim 1, wherein the adhesive is a two-  
component adhesive which cures at room temperature or with the aid of  
- 10 heat.

16. A process as claimed in claim 1, wherein the adhesive is a one-  
component adhesive.